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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,823	05/03/2001	Francisco A. Uribe	S-94,613	7902

35068 7590 10/16/2003

UNIVERSITY OF CALIFORNIA  
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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/848,823

Applicant(s)

URIBE ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1-4. The declaration filed on August 1, 2003 under 37 CFR 1.131 is sufficient to overcome the JP 2000-262899 reference. The declaration shows a reduction to practice of the following claimed catalyst species which are disclosed by the '899 reference: elemental Cu, Mo, and W, and oxides of Cu, Fe, and Co. While the declaration does not show a reduction to practice of elemental Fe and Co and oxides of Mo and W, these species are obvious variants of the species that were shown to be reduced to practice (the equivalency of elemental metals and their oxides is established by the abstract of the '899 reference). Accordingly the declaration is considered to be sufficient to antedate the '899 reference. In the present Office action, claims 1-4 are newly rejected under 35 USC §103. As a result, this action is non-final.

### ***Claim Rejections - 35 USC § 103***

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al (JP 8-203537) in view of Bellows et al (U.S. Patent 5,955,214).

Regarding claim 1, Uchida et al. teach a fuel cell comprising a polymer electrolyte membrane (2) having an electrocatalytic surface thereon in Figure 2. A porous anode backing comprising carbon particles (4; the white particles in Fig. 2(A)) abuts the electrolyte membrane at a first surface thereof. A CO oxidation catalyst layer (12) is present on the second surface of the anode backing (see claim 4 and Fig. 2 of the reference). Regarding claims 2 and 3, the

electrocatalyst (5) is Pt or Pt/Ru alloy (see claim 3 and Example 1 of the reference). Regarding claim 1, in Example 1, the reference discloses that the electrocatalytic surface is formed by mixing the electrocatalyst with the polymer of the polymer electrolyte membrane, and then bonding it on an anode side of the membrane. Regarding claim 4, the layer of oxidation catalyst includes carbon (4), which is a hydrophobic material.

Uchida et al. do not expressly teach that the CO oxidation catalyst consists essentially of a non-precious metal oxidation catalyst selected from the group consisting of Cu, Fe, Co, Tb, W, Mo, Sn, and oxides thereof, as recited in claim 1.

In the abstract, Bellows et al. teach a CO oxidation catalyst for removing CO from a hydrogen-rich gas stream. The catalyst may consist of mixed oxides of Sn and Cu or an SnO<sub>2</sub>-CuO gel.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the disclosure of Bellows et al. to use a catalyst consisting of tin and copper oxides in the CO oxidation catalyst layer of Uchida et al. In column 1, lines 27-37, Bellows et al. teach that the objects of their invention are 1) to “treat a CO-containing, hydrogen rich gas mixture to lower the CO content of the mixture to render it more suitable for use fuel cell systems”; 2) to “provide a method for lowering the CO content of a hydrogen rich gas stream in a single step”; and 3) to “provide a method for reducing the CO content of a hydrogen rich gas stream which is energy efficient.” Accordingly, the artisan would be motivated to use a catalyst consisting of tin and copper oxides in the CO oxidation catalyst layer of Uchida et al. Furthermore, the disclosure of Bellows et al. indicates that Cu and Sn oxides are suitable materials for use as CO oxidation

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catalysts in fuel cell systems. The selection of a known material based on its suitability for its intended use has been held to be *prima facie* obvious. See MPEP §2144.07.

Regarding the recitation in claim 1 that the fuel cell is “usable in a reformat fuel stream containing diluted hydrogen fuel with CO as an impurity and with added air,” this limitation recites an intended use and does not have to be accorded patentable weight, pursuant to MPEP §2111.02. If a prior art structure is capable of performing the intended use as recited in the preamble, then it meets the claim. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997).

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051 (prior to December 17, 2003) or (571) 272-1299 (after December 17, 2003). The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

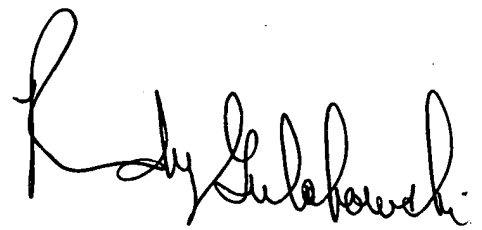
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 872-9310 (for non-final communications) or (703) 872-9311 (for after-final communications).

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Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

October 9, 2003

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with the first name "Randy" and last name "Gulakowski" clearly distinguishable.

RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700